PROGRESS
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MEDICINE

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Uremia, (Harvey Lecture, 1920.) —FOSTER (*Jour. Am. Med. Assn.*, 1921, lxxvi, 281) says our present-day conception of uremia is reviewed and summarized. It is noted that uremia is an intoxication which may occur in nephritis and which manifests itself by psychomotor disturbances. The symptoms may be roughly divided into three groups: (1) Toxic: headache, vomiting, diarrhea, amaurosis; (2) psychic: hallucinatory paranoid states, stupor and coma; (3) motor: transient paralyses, paresis and hemiplegia and convulsions. Dependent upon the occurrence of these symptoms in a given case clinical types of uremia are recognized: (1) Convulsive or epileptiform type. Initiated by headache and sudden amaurosis (the latter without demonstrable lesions in the eye), a convulsion occurs. Coma is a sequel. The convulsive seizures and the not infrequent recovery are striking features. (2) A second type characterized by gradually deepening coma without psychic or motor disturbances. (3) A third type in which lethargy and somnolence occur along with gastro-intestinal and psychic disorders. Visual disturbances occur, as a rule, only in the presence of demonstrable retinal changes (hemorrhages, exudate, neuritis). Convulsions are absent. Edema of the brain in connection with uremia is discussed and the author finds that "in its highest severity it occurs with constancy in but one type of uremia, that type in which stupor and coma without convulsion, without psychic or motor disorders, is the prominent nervous symptom." Definite cerebral hyperemia, with or without slight edema, he has observed in only one group of cases, viz., that in which the subject had died of the convulsive type of uremia. Having previously noted that, anatomically, "aside from the lesions in the kidney and occasionally ulceration in the gastro-intestinal tract uremia leaves but few signs," and having discussed the cerebral condition frequently found in association with certain types of the condition, the author considers uremia from the standpoint of an intoxication. Anuria (as a result of ureteral obstruction, ligation of renal arteries, bilateral nephrectomy, etc.) is discussed and the symptoms resulting from it differentiated from those occurring in epileptiform uremia. Other differences are pointed out: The retention of water in the case of the anuria with the resulting dilution in the body of the retained nitrogenous substances; in anuria all the substances normally excreted in the body are held back while in nephritis some are retained more than others. It is pointed out that uremia may not be only a consequence of water loss through the kidneys but may also follow diaphoresis or restriction of the fluid intake. In connection with his discussion of the blood chemistry of uremia the author states that it seems definite that the tissues retain more of the nitrogenous bodies than does the blood and that there is some ground for the belief that the excess of these bodies in the blood is simply an expression of the supersaturation of the tissues. The sharp, clinical contrast between the convulsive and asthenic types of uremia is emphasized. Feeling that if the former is an intoxication the toxin should be recoverable from the blood or tissues the author attempted the isolation of various organic substances from the blood of patients suffering from convulsive uremia in order to study their effect on animals. Colloidal methods such as used for the separation of alkaloidal bases were employed and the base recovered in a pure state for the tests. The solution of the base from the blood of 22 cases of convulsive uremia, and from twice that number of controls, was injected intraperitoneally into guinea-pigs. In the case of the former uniformly fatal results were obtained. Polypnea, muscular twitching, convulsive seizures and death within a few minutes was the usual occurrence. In some experiments paresis of the hind legs and diarrhea preceded the convulsions. In a few convulsions were absent, death being preceded by twitching movements and a stuporous condition. No toxic substance was isolated from the blood of control patients. The substance isolated is basic in its properties and forms crystalline salts with platinum and gold. Nothing is known of its chemical nature because of the inability to collect a sufficient quantity for analysis. Although the author states that "the existence of a toxin in uremic blood will not have been demonstrated until its chemical identity is known," he feels that his investigations "seem to indicate that the blood of patients with epileptiform uremia contains an organic base which is toxic."

A Study of the Spinal Fluid in 1869 Cases of Syphilis in All Stages.—Wile and Marshall (*Arch. Dermatol. and Syphil.*, 1921, iii, 293). Based on a study of these cases the authors conclude: (1) The nervous system, if uninvolved as shown by the accepted criteria during the first months of the infection, is seldom involved later. A negative preliminary puncture followed by positive findings at a later date occurred in only three of several thousand cases punctured. (2) Of the several criteria indicating involvement, the increase of organic solids is found to be slightly higher than either the cell count or Wassermann reaction, the relative value being indicated in the order just mentioned. (3) A considerable degree of cerebrospinal involvement may be present in the latent period of syphilis without manifesting any signs or symptoms. (4) Such asymptomatic cases may become symptomatic later, and a study of the colloidal gold curve in these cases is of some value in estimating the ultimate prognosis of the case. (5) Comparing the large number of cases of primary and secondary syphilis in which positive findings are found with the relatively small percentage of late neurosyphilis as compared to total syphilitic incidence, we must conclude that a large number of early cases are in the nature of a meningeal roseola which is transitory in its clinical aspects. (6) The interpretation of the lumbar puncture findings particularly early in the incidence of the disease, constitutes a valuable guide in estimating the ultimate prognosis of the disease with regard to the integrity of the nervous system.

Industrial Lead Poisoning.—Shie (*Jour. Am. Med. Assn.*, 1921, lxxvi, 835). Basing his opinions on findings encountered in a study of a large series of cases the author feels that certain symptoms have been unduly emphasized in the diagnosis of plumbism. Anemia is rare. Pallor of the skin is common, possibly due to peripheral vasoconstriction. Basophilia is unfrequent in acute cases and rare in chronic cases. The occurrence of hypertension is variable; it was practically absent in cases of plumbism occurring in pottery workers, whereas among "lead refiners" exposed to fumes it is almost universally present. Perhaps the difference in the form of lead to which the workers were exposed is responsible. Constipation is usual, though by no means constant. Diarrhea was a frequent complaint. A point of diagnostic value is the finding of an increased mononuclear percentage in the differential white blood cell count. This was almost invariably present. A lead line was noted in 90 per cent. of the cases. Peripheral nerve palsies were common. The importance of prophylactic measures (improved working conditions, personal hygiene, medical supervision of industries in which the lead hazard is present) is emphasized.

Serious Reactions to Repeated Transfusions in Pernicious Anemia.—Bowcock (*Johns Hopkins Hosp. Bull.*, 1921, xxxii, 83). From a review of the literature and careful study of three cases at the Johns Hopkins Hospital in which after a large number of transfusions there occurred extremely severe reactions following the transfusion of apparently compatible blood the author arrives at the following conclusions: "(1) In certain patients suffering with pernicious anemia who have been transfused repeatedly transfusion becomes self-limited because of the inadequacy of methods for selecting suitable donors. (2) The difficulty having once been discovered no attempt should be made to transfuse these patients. (3) The severe reaction is probably due to an antiphylactic manifestation, and not to hemolysis *per se*. (4) Blood-matching should be carried out with the greatest care, whenever possible the incubation period should be at least two hours, or longer. (5) Blood serum free from cellular elements may produce bone-marrow stimulation. (6) Members of Group IV cannot be regarded absolutely as universal donors."